

REMARKS

The examiner is thanked for the performance of a thorough search.

Claims 1, 21, 22, and 23 have been amended herein. Claims 17-20 have been canceled.

Claims 24-27 have been added. Hence, Claims 1-16 and 21-27 are pending in the application.

Each issue raised in the Office Action mailed June 16, 2005 is addressed hereinafter.

I. ISSUES RELATING TO THE CITED ART

A. INDEPENDENT CLAIM 1

Claim 1 has been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Sundaresan et al., U.S. Patent No. 6,675,370 (“SUNDARESAN”) in view of Flanagan, “Java in a Nutshell” (“FLANAGAN”). The rejection is respectfully traversed.

Claim 1 recites:

A method for automatically generating a description of a data exchange format based on computer program source code expressed in a source language, the method comprising the computer-implemented steps of:
receiving, from a source code file, comment data including first data indicating a parameter of the data exchange format, wherein the comment data is ignored by a source code processor of the source language;
receiving from the source code file second data, associated with the comment data, indicating a statement that defines a class of data objects in the source language;
wherein the data exchange format expresses the structure of data that is exported from, and imported to, data objects of the class of data objects; and
automatically **generating**, based on the first data and the second data, **third data** that describes the data exchange format, **wherein the third data comprises instructions defining a mapping between attributes of the class of data objects and elements of the data exchange format.**

SUNDARESAN and FLANAGAN, whether taken separately or in combination, do not disclose, teach or suggest all features of Claim 1.

1. SUNDARESAN and FLANAGAN do not teach, describe, or suggest the feature of Claim 1 of a data exchange format that expresses the structure

of data that is exported from, and imported to, data objects of a class of
data objects

Claim 1 recites a method for automatically generating a description of a data exchange format. Solely for purposes of clarifying the claimed subject matter, Claim 1 has been amended herein to recite that the data exchange format expresses the structure of data that is exported from, and imported to, data objects of the class of data objects; Applicants believe that this subject matter was inherent in the original claims, but have added it for clarification and not to overcome prior art.

The Office Action asserts that the “data exchange format” feature of Claim 1 is described in col. 3, lines 35-42 of SUNDARESAN. In col. 3, lines 35-57, SUNDARESAN states:

The present invention introduces a custom Javadoc tag, @production, to represent each of the productions in a class. The value associated with this tag is an XML structure representing that production. An XML structure is used because it has the capability to define the necessary hierarchical tag structure. Other extensible tag languages also have this characteristics and are considered within the scope of the present invention.
The following XML document type declaration (DTD) defines one way of validly forming a production tag according to the present invention; other functionally equivalent definitions are also contemplated:

```
<!ELEMENT production (rhs)*>
<!ATTLIST production
    lhs-nt NMTOKEN #required>
<!ELEMENT rhs (rhs-nt.vertline.PCDATA)*>
<!ELEMENT rhs-nt EMPTY>
<!ATTLIST rhs-nt
    name NMTOKEN #required
    classname NMTOKEN #IMPLIED>
```

(Emphasis added.) Thus, the Office Action seems to assert that the XML structure described in the above paragraph corresponds to a data exchange format that expresses the structure of data that is exported from, and imported to, data objects of a class of data objects as featured on Claim 1. This is not correct.

The XML structure described in the above passage from SUNDARESAN describes the format of a user-defined tag, “@production”, which tag describes EBNF productions for a JAVA class. SUNDARESAN does not explicitly describe what is an EBNF production. It is respectfully submitted that, as commonly accepted in the computer science art, an EBNF (Extended Backus Naur Form) is a formal mathematical way to describe a programming language. Specifically, an EBNF production is an expression that describes a statement in a programming language. For example, an EBNF production is an expression of the form

symbol \rightarrow alternative1 | alternative 2 ...

where the “symbol” on the left-hand side of the “ \rightarrow ” must be replaced by one of the alternatives on the right-hand side. Thus, the EBNF production

Property \rightarrow value | obj*FOOBAR

in col. 4, lines 54 of SUNDARESAN simply means that the symbol “Property” in a JAVA source code may take on either “value” or “obj”.

Further, SUNDARESAN states that the EBNF productions are used to “define and document a class and sometimes must refer to another class outside of the class in which they reside.” (col. 2, lines 56-58.) “The automatically generated, browsable representation of these productions, according to the [SUNDARESAN] invention, reflect the class hierarchy of the classes being documented and allow a user to browse this closely wired documentation.” (SUNDARESAN, col. 2, lines 58-62.) Thus, the EBNF productions in SUNDARESAN reflect the class hierarchy of an application and are used to represent the classes of the hierarchy in a browsable documentation. Significantly, nothing in SUNDARESAN teaches, describes, or suggests that the EBNF productions define the structure of data that is exported from, or imported to, data objects that are instantiated from a class of data objects as recited in Claim 1.

For the above reasons, it is respectfully submitted that SUNDARESAN does not teach, describe, or suggest, the feature of Claim 1 of a data exchange format that expresses the structure of data that is exported from, and imported to, data objects of a class of data objects. Further, the Office Action does not assert that FLANAGAN describes this feature. Thus, any combination of SUNDARESAN and FLANAGAN necessarily fails to teach the above feature of Claim 1.

2. SUNDARESAN and FLANAGAN do not teach, describe, or suggest the feature of Claim 1 of generating a third data that describes the data exchange format, wherein the third data comprises instructions defining a mapping between attributes of the class of data objects and elements of the data exchange format

The Office Action asserts that the HTML documentation produced by the system in SUNDARESAN corresponds to the third data featured in Claim 1, and that the EBNF productions that may be expressed in the HTML documentation define a mapping between attributes of a class of data objects and elements of a data exchange format. This is incorrect.

First, as discussed above, SUNDARESAN does not describe a data exchange format that expresses the structure of data that is exported from, and imported to, data objects of the class of data objects. Thus, contrary to the assertion in the Office Action, SUNDARESAN cannot possibly describe a HTML document that includes a mapping TO elements of such data exchange format.

Second, neither the passages cited in the Office Action, nor any other passage in SUNDARESAN, describes, teaches, or suggests, that a generated HTML document includes any mapping. For example, in col. 4, lines 21-25, SUNDARESAN states:

The source code is then processed, in step 110, by the Javadoc processor using the extended doclet. Finally, in step 112, the automatically generated HTML documentation for each class is generated.

The generated HTML documentation depicts the representation of a production, which representation is generated based on a “@production” tag that may be included in a JAVA source code. (See SUNDARESAN, col. 4, lines 36-47). In col. 5, lines 1-5, SUNDARESAN continues to describe what the HTML document includes:

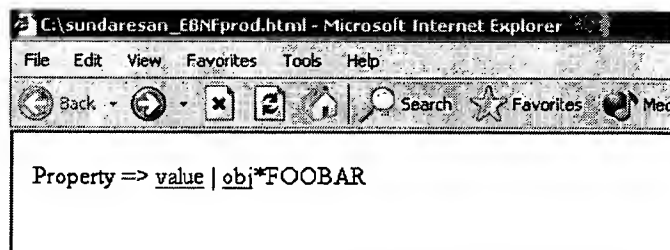
When run through the extended processor, the @production tag 302 is recognized along with the valid form of the corresponding XML structure and **produces the following HTML 350:**

```
<table>
<tr>
<td><a name="Property">Property</a></td>
<td>=></td>
<td><a href="#value">value</a> .vertline.
    <a href="com.ibm.rdf.RDFObj.html#obj">obj</a>*FOOBAR
</td>
</tr>
</table>
```

(Emphasis added.)

In order to illustrate what the above HTML document includes, the Applicants’ representative copied the above HTML lines into a file named “sundaresan_EBNFprod.html”, and opened it with the Internet Explorer browser. A screen shot of what was presented in the browser is depicted below in Figure 1:

Figure 1.



As can be seen from the figure above, the HTML document produced by the system in SUNDARESAN **depicts** an EBNF production, in which the right-side of the production includes two hyperlinks (at “value” and “obj”). The HTML document does NOT include anything else

that may be based on the “@production” tag that is included in the JAVA source code. Thus, since the only thing included in the HTML document that is based on the “@production” tag is an EBNF production, it seems that according to the Office Action it is the EBNF production itself that corresponds to the mapping recited in Claim 1. However, an EBNF production is NOT a mapping between attributes of a class and elements of a data exchange format.

SUNDARESAN has explicitly defined that its EBNF productions “define and document a class and sometimes must refer to another class outside the class in which they reside.” (Col. 2, lines 56-58.) Thus, the EBNF productions included in the HTML document generated by the SUNDARESAN system cannot possibly correspond to the “mapping” feature of Claim 1.

For the above reasons, it is respectfully submitted that SUNDARESAN does not teach, describe, or suggest, the feature of Claim 1 of generating a third data that describes the data exchange format, wherein the third data comprises instructions defining a mapping between attributes of the class of data objects and elements of the data exchange format. Further, the Office Action does not assert that FLANAGAN describes this feature. Thus, any combination of SUNDARESAN and FLANAGAN necessarily fails to teach the above feature of Claim 1.

Since, as discussed above, SUNDARESAN and FLANAGAN, whether taken alone or in combination, do not teach, describe, or suggest all features of Claim 1, Claim 1 is patentable under 35 U.S.C. § 103(a) over SUNDARESAN in view of FLANAGAN. Reconsideration and withdrawal of the rejection of Claim 1 are respectfully requested.

B. INDEPENDENT CLAIMS 21-23

Independent Claims 21-23 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over SUNDARESAN in view of FLANAGAN.

Claims 21-23 include features similar to the features of Claim 1 discussed above. Thus, it is respectfully submitted that Claims 21-23 are patentable under 35 U.S.C. § 103(a) over

SUNDARESAN in view of FLANAGAN for at least the reasons given above with respect to Claim 1. Reconsideration and withdrawal of the rejections of Claims 21-23 are respectfully requested.

C. DEPENDENT CLAIMS 2-16

Claims 2-3, 7-8, and 10-16 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over SUNDARESAN in view of FLANAGAN.

Claims 6 and 9 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over SUNDARESAN in view of FLANAGAN, and further in view of Goldfarb et al., “The XML Handbook” (“GOLDFARB”).

Claims 4 and 5 have been rejected as allegedly unpatentable under 35 U.S.C. § 103(a) over SUNDARESAN in view of FLANAGAN, and further in view of Tuatini, U.S. Patent Application Publication No. US 2001/0054172 A1 (“TUATINI”).

Claims 2-16 are dependent upon independent Claim 1 and thus include each and every feature of the independent claim. Furthermore, in rejecting Claims 4, 5, 6, and 9 the Office Action relies explicitly on SUNDARESAN, and not on GOLDFARB or TUATINI, to show the features discussed above with respect to Claim 1. Because SUNDARESAN does not teach the subject matter of Claim 1, any combination of SUNDARESAN with GOLDFARB and TUATINI necessarily fails to teach the complete combination of features recited in any dependent claim of Claim 1. Thus, each of Claims 2-16 is allowable for the reasons given above for Claim 1.

In addition, each of Claims 2-16 introduces one or more additional features that independently render it patentable. However, due to the fundamental differences already identified, to expedite the positive resolution of this case a separate discussion of those features

is not included at this time. Therefore, it is respectfully submitted that Claims 2-16 are allowable for the reasons given above with respect to Claim 1.

D. NEW CLAIMS 24-27

Independent Claim 24 includes features similar to the features of Claim 1 discussed above. Specifically, Claim 24 recites the features of (1) a data exchange format that expresses, in XML, the structure of data that is exported from, and imported to, data objects of a class of data objects, and (2) generating an XML Document Type Definition (DTD) document that describes the data exchange format, wherein the XML DTD document comprises instructions defining a mapping between attributes of the class of data objects and elements of the data exchange format. For this reason, it is respectfully submitted that Claim 24 is patentable under 35 U.S.C. § 103(a) over SUNDARESAN in view of FLANAGAN for at least the reasons given above with respect to Claim 1.

Claims 25-27 are dependent upon independent Claim 24 and thus include each and every feature of the independent claim. Thus, each of Claims 25-27 is allowable for the reasons given above for Claim 1. In addition, each of Claims 25-27 introduces one or more additional features that independently render it patentable. However, due to the fundamental differences already identified, to expedite the positive resolution of this case a separate discussion of those features is not included at this time. Therefore, it is respectfully submitted that Claims 25-27 are allowable for the reasons given above with respect to Claim 1.

II. CONCLUSION

The Applicants believe that all issues raised in the Office Action have been addressed. Further, for the reasons set forth above, the Applicants respectfully submit that allowance of the

pending claims is appropriate. Reconsideration of the present application is respectfully requested in light of the amendments and remarks herein.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

A petition for extension of time, to the extent necessary to make this reply timely filed, is hereby made. If applicable, a law firms check for the petition for extension of time fee is enclosed herewith. If any applicable fee is missing or insufficient, throughout the pendency of this application, the Commissioner is hereby authorized to charge any applicable fees and to credit any overpayments to our Deposit Account No. 50-1302.

Respectfully submitted,

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